

AMENDMENT TO THE CLAIMS

The following is a detailed listing of all claims that are pending in the Application.

1. (Currently amended) A converter-controller, operable to control a converter having a transformer, the transformer having a primary and a secondary coil, the converter-controller comprising:
 - a power device, coupled to the primary coil of the transformer;
 - a resonant circuit, coupled to the primary coil and the power device;
 - a voltage regulator, coupled to the resonant circuit; and
 - a control logic, coupled to the voltage regulator, wherein the control logic is configured to operate the power device at an essentially constant frequency by varying the length of switch-ON and switch-OFF intervals of the power device;
wherein the resonant circuit is operable to provide operating power for the control logic.
2. (Original) The converter-controller of claim 1, wherein the resonant circuit comprises:
 - a central node;
 - a resonant capacitor, coupled between the central node and the power device;
 - a resonant diode, having an anode and a cathode, the cathode of the resonant diode coupled to the central node; and
 - a resonant inductor, coupled between the anode of resonant diode and a ground.
3. (Original) The converter-controller of claim 2, wherein the voltage regulator comprises:
 - a regulator diode, having an anode and a cathode, the anode of the regulator diode coupled to the central node;
 - a regulator resistor, coupled to the cathode of the regulator diode;

a Zener diode, coupled between the regulator resistor and a ground; and
a regulator capacitor, coupled in parallel to the Zener diode.

4. (Original) The converter-controller of claim 3, wherein:
the control logic is coupled in parallel to the regulator capacitor.
5. (Original) The converter-controller of claim 3, wherein:
one or more of the regulator diode, the Zener diode, the regulator capacitor, the
regulator resistor, the resonant circuit, the power device, and the control logic is
formed on an integrated circuit.
6. (Original) The converter-controller of claim 1, wherein the power device is one of
a MOS-FET, a bipolar junction transistor, and an insulated gate bipolar transistor.
7. (Original) The converter-controller of claim 1, wherein:
the control logic is coupled to a gate of the power device; and
the control logic is operable to control an on-off time of the power device.
8. (Original) The converter-controller of claim 3, wherein the converter comprises:
a high voltage link, coupled to the primary coil.
9. (Original) The converter-controller of claim 8, wherein the high voltage link is
coupled to at least one of a DC source and a rectified AC source.
10. (Original) The converter-controller of claim 8, wherein:
the central node of the resonant circuit is coupled to the high voltage link through a
connecting diode; and
the regulator resistor is coupled to the high voltage link through a connecting resistor.

11. (Original) The converter-controller of claim 1, wherein:
the secondary coil of the transformer is coupled to the control logic, operable to provide a feedback signal.
12. (Original) The converter-controller of claim 11, wherein the secondary coil is coupled to the control logic through a coupled photodiode – phototransistor pair.
13. (Original) The method of operating a converter-controller, comprising a power device, coupled to a primary coil of a transformer of a converter, a resonant circuit, a voltage regulator, and a control logic, the method comprising:
powering the control logic by the power device, the resonant circuit and the voltage regulator; and
controlling, by the control logic, the length of switch-ON and switch-OFF intervals of the power device, thereby controlling an output voltage of the converter.
14. (Original) The method of claim 13, wherein the converter is operated in one of a flyback mode and a forward mode.
15. (Previously presented) The method of claim 13, wherein the power device is operated at an essentially constant frequency.
16. (Currently amended) A converter-controller, operable to control a converter having a transformer, the transformer having a primary and a secondary coil, the converter-controller comprising:
a power device, coupled to the primary coil of the transformer;
a series resonant circuit, coupled to the primary coil and the power device;
a voltage regulator, coupled to the resonant circuit; and

a control logic, coupled to the voltage regulator, wherein an operating voltage of the control logic is clamped;
wherein the resonant circuit is operable to provide operating power for the control logic.

17. (Previously presented) The converter-controller of claim 16, wherein the operating voltage of the control logic is clamped below 10 Volts.
18. (Previously presented) The converter-controller of claim 16, wherein the resonant circuit comprises:
 - a central node;
 - a resonant capacitor, coupled between the central node and the power device;
 - a resonant diode, having an anode and a cathode, the cathode of the resonant diode coupled to the central node; and
 - a resonant inductor, coupled between the anode of resonant diode and a ground.
19. (Previously presented) The converter-controller of claim 16, wherein the voltage regulator comprises:
 - a regulator diode, having an anode and a cathode, the anode of the regulator diode coupled to the central node;
 - a regulator resistor, coupled to the cathode of the regulator diode;
 - a Zener diode, coupled between the regulator resistor and a ground; and
 - a regulator capacitor, coupled in parallel to the Zener diode.